

CLAIMS

1. A pressure sensitive adhesive sheet comprising a substrate which is an electron-beam non-decaying fluorine-containing material sheet and a pressure sensitive adhesive layer provided on the outer surface of the substrate with or without an intermediate layer therebetween, wherein said fluorine-containing material sheet has a chemical bond with the pressure sensitive adhesive layer or intermediate layer directly contacting with said fluorine-containing material sheet and the chemical bond is formed by the irradiation of an electron beam at least on said fluorine-containing material sheet.

2. The pressure sensitive adhesive sheet as claimed in claim 1, wherein said fluorine-containing material sheet contains a polymer cross-linked by the irradiation of an electron beam.

3. The pressure sensitive adhesive sheet as claimed in claim 1, wherein said pressure sensitive adhesive layer contains a pressure sensitive adhesive crosslinked by the irradiation of an electron beam.

4. The pressure sensitive adhesive sheet as claimed in claim 2, wherein said pressure sensitive adhesive layer contains a pressure sensitive adhesive crosslinked by the irradiation of an electron beam.

5. The pressure sensitive adhesive sheet as claimed in claim 1, wherein said fluorine-containing material sheet contains 10 wt % or more of fluorine.

6. The pressure sensitive adhesive sheet as claimed in claim 2, wherein said fluorine-containing material sheet contains 10 wt % or more of fluorine.

7. The pressure sensitive adhesive sheet as claimed in claim 3, wherein said fluorine-containing material sheet contains 10 wt % or more of fluorine.

8. The pressure sensitive adhesive sheet as claimed in claim 1, wherein said pressure sensitive adhesive sheet is transparent.

9. The pressure sensitive adhesive sheet as claimed in claim 2, wherein said pressure sensitive adhesive sheet is transparent.

10. The pressure sensitive adhesive sheet as claimed in claim 3, wherein said pressure sensitive adhesive sheet is transparent.

11. The pressure sensitive adhesive sheet as claimed in claim 4, wherein said pressure sensitive adhesive sheet is transparent.

12. The pressure sensitive adhesive sheet as claimed in claim 1, wherein said pressure sensitive adhesive sheet is a protective film.

13. The pressure sensitive adhesive sheet as claimed in claim 2, wherein said pressure sensitive adhesive sheet is a protective film.

5 14. The pressure sensitive adhesive sheet as claimed in claim 3, wherein said pressure sensitive adhesive sheet is a protective film.

15. The pressure sensitive adhesive sheet as claimed in claim 4, wherein said pressure sensitive adhesive sheet is a protective film.

10 16. The pressure sensitive adhesive sheet as claimed in claim 5, wherein said pressure sensitive adhesive sheet is a protective film.

15 17. A method for producing a pressure sensitive adhesive sheet comprising a substrate which is an electron-beam non-decaying fluorine-containing material sheet and a pressure sensitive adhesive layer provided on the outer surface of the substrate with or without an intermediate layer thereon, said method comprising coating a pressure sensitive adhesive layer or an intermediate layer on the surface of an electron-beam non-decaying fluorine-containing material sheet and irradiating an electron beam on said coated fluorine-containing material sheet to form a chemical bond between said pressure sensitive adhesive layer or intermediate layer and said fluorine-containing material sheet.

20 18. A method for producing a pressure sensitive adhesive sheet comprising a substrate which is an electron-beam non-decaying fluorine-containing material sheet and a pressure sensitive adhesive layer provided on the outer surface of the substrate with or without an intermediate layer, said method comprising irradiating an electron beam on a electron-beam non-decaying fluorine-containing material sheet and then coating a pressure sensitive adhesive layer or an intermediate layer on the surface of said fluorine-containing material sheet to form a chemical bond between said fluorine-containing material sheet and said pressure sensitive adhesive layer or intermediate layer.

25